

REMARKS

Claims 1-18 are pending in this application for the Examiner's review and consideration.

Rejection Under 35 U.S.C. § 102(b)

Claims 1-4, 6-10, 12-16 and 18 were rejected under 35 O.K. § 102(b) as allegedly being anticipated by U.S. Patent Application No. 2002/0059883 A1 to Takada *et al.* ("Takada") for the reasons set forth on pages 2-3 of the Office Action. Applicants respectfully traverse the rejection and submit that claims 1-4, 6-10, 12-16 and 18 (including amended claims 1-2, 6-7, and 12-13) are not anticipated for the reasons that follow.

Takada is directed to an aqueous ink suitable for inkjet recording. Takada, paragraph [0002]. The ink can include cationic self dispersing carbon black and an anionic self dispersing pigment. *Id.*, paragraphs [0064] and [0090]. The content of carbon black in the ink can be within the range of 0.1 % to 15 %. *Id.*, paragraph [0075].

The present invention is directed to an ink set for inkjet recording for forming a black image portion in a color image with a black ink and a color ink, wherein the black ink comprises cationic or anionic self-dispersible carbon black and the color ink comprises a substance having an opposite polarity to that of the self-dispersible carbon black. *See* Instant Specification, page 5, lines 3-8 and claim 1. Additionally, the present invention is directed to a method for inkjet recording comprising: recording a color image in accordance with recording signals by ejecting from an orifice a black ink and a color ink, wherein the black ink comprises cationic or anionic self-dispersible carbon black and the color ink comprises a substance having an opposite polarity to that of the self-dispersible carbon black, and wherein a black image portion in the color image is formed with the black ink and the color ink, and a time lag between ejecting of the black ink and ejecting of the color ink is 20 ms or less. *See* Instant Specification, page 5, lines 9-17 and claim 6. The present invention is also directed to an apparatus for inkjet recording for forming a color image comprising: an ink cartridge for ejecting a black ink and another ink cartridge for ejecting a color ink, wherein the black ink comprises cationic or anionic self-dispersible carbon black and the color ink comprises a substance having an opposite polarity to that of the self-dispersible carbon black, and wherein a black image portion in the color image is formed with the black ink and the color ink, and a time lag between ejecting of the black ink and ejecting of the color ink is 20 ms or less. *See* Instant Specification, page 5, line 18 – page 6, line 1

and claim 12.

To anticipate a claim, a reference must teach each and every element of the claim. Manual of Patent Examining Procedure (MPEP) § 2131. “A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” *Verdegaal Bros. v. Union Oil Co. of California*, 914 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). Applicants submit that Takada does not disclose each and every element of independent claims 1, 6, and 12 of the present invention for the following reasons.

Regarding claim 1, Applicants respectfully note that Takada does not disclose an ink set comprising a separate black ink and color ink. Accordingly, Takada does not anticipate independent claim 1 of the present invention, and its respective dependent claims 2-4.

Independent claims 6 and 12 have several common limitations or elements, *i.e.*, that a black image portion in the color image is formed with the black ink and the color ink and that a time lag between ejecting the black ink and ejecting the color ink is 20 ms or less. Takada does not disclose either of these limitations. Takada is completely silent as to a 20 ms or less time lag between ejecting the black ink and ejecting the color ink. Moreover, Takada is silent as to forming a black image portion in a color image with a black ink **and** a color ink. Takada rather discloses aqueous ink which exhibits characteristics based on cationic self-dispersing carbon black in which bleeding between anionic color ink and aqueous ink is reduced. Takada, paragraph [0014]. Takada is directed more to solving the problem common to cationic self-dispersing carbon black inks, *i.e.*, after periods when ink ejection is suspended, it can be difficult to stably resume ink ejection. *Id*, paragraph [0013].

Forming a black image portion in a color image with a black ink **and** a color ink is a critical limitation of the claims of the present invention. Applicants have discovered that in forming a black image on recording paper, the quality of the black image is improved by applying a color ink over the black image. The black ink and the color inks of the present invention's inkset, though applied at different times, are applied within the same region of the recording paper to form a black image portion in a color image. The specification of the present invention states, for example, that the method for inkjet recording “is characterized [in that] the black image portion in the color image contains black ink **and** the color ink, and a time lag between ejecting of the black ink and ejecting of the color ink is 20 ms or less.” Instant Specification, page 26, lines 6-10 (underlining added for emphasis). The specification further states that due to this short time lag, “even when the order of recording the color ink and the black ink is inverse during reciprocal scanning movement, both inks are effectively mixed

to react with each other on paper before penetration, whereby high density of images can be obtained.” *Id.* page 26, lines 15-19. The specification of the present invention also states that “the printed amount of the color ink to form the black image portion is preferably specified in a range of 10 to 50 % relative to the amount of the black ink,” and that “the use amount of the color ink may vary depending on the proportion of each of the cyan, magenta, and yellow dyes, or may be adjusted to alter the color tone at the black image portion.” *Id.* page 28, lines 3-7. It is thus clear that the black image portion of the present invention is formed from a mixture of the black ink and the color inks in the same region of the recording paper. Takada neither discloses nor suggests this limitation. This critical difference between the disclosure in Takada and the present invention precludes anticipation of the present invention by Takada. Therefore, Takada does not teach or even suggest each and every element of independent claims 6 and 12 of the present invention. Accordingly Takada does not anticipate independent claims 1, 6 and 12 of the present invention, their respective dependent claims 2-4, 7-10, 13-16, or claim 18, which depends from claims 4, 10, or 16.

Claims 1, 4, 6, 10, and 18 were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 6,036,759 to Wickramanayake (“Wickramanayake”) for the reasons set forth on page 4 of the Office Action. Applicants respectfully traverse the rejection and submit that claims 1, 4, 6, 10, and 18 are not anticipated for the reasons that follow.

Wickramanayake is directed to an inkset in which bleed between color and black is reduced by using at least one anionic pigment in black ink and at least one cationic surfactant in the color ink. Wickramanayake, col. 2, lines 46-49. The black ink can include an anionic self-dispersing carbon black, and the color ink can include an anionic or cationic self-dispersing pigment. *Id.*, col. 3, lines 1-67.

Regarding independent claim 1, Applicants note that Wickramanayake does not disclose a color ink comprising a self-dispersible pigment. Wickramanayake is silent regarding use of self-dispersible pigment. Therefore, Wickramanayake does not disclose or suggest all of the limitations of independent claim 1 of the present invention. Accordingly, Wickramanayake does not anticipate, or even render obvious, independent claim 1 of the present invention, or its dependent claim, 4.

Regarding independent claim 6, Applicants also note that, like Takada, Wickramanayake is silent regarding the important limitations of forming a black image portion in a color image with a separate application of a black ink *and* a color ink and a 20 ms or less time lag between ejecting the black ink and ejecting the color ink. These critical differences between the disclosure in

Wickramanayake and the present invention preclude anticipation of the present invention by Wickramanayake. Therefore, Wickramanayake does not teach or even suggest each and every element of independent claim 6 of the present invention. Accordingly Wickramanayake does not anticipate independent claims 1 and 6 of the present invention, or their dependent claims 4, 10, and 18.

Rejection Under 35 U.S.C. § 103

Claims 5, 11, and 17 were rejected under 35 U.S.C. § 103 as allegedly being obvious over Takada in view of U.S. Patent No. 5,151,128 to Fukushima *et al.* ("Fukushima") for the reasons set forth on pages 5-6 of the Office Action. Applicants respectfully traverse the rejection and submit that claims 5, 11, and 17 are not obvious for the reasons that follow.

Fukushima discloses an inkjet ink that is capable of high definition and high image quality recording on both coated inkjet paper and non-coated paper. Fukushima col. 1, lines 8-20. The ink comprises a coloring agent, a liquid carrier medium and an alkyl ether of polyoxyethylene-polypropylene random polymer having the general formula:

$R_1-(X)-O-R_2$, wherein R_1 and R_2 are each a hydrogen atom or an alkyl group, with the proviso that they cannot both be a hydrogen atom, and X is a random polymer of ethylene oxide and polypropylene oxide. Fukushima, col. 2, lines 13-24.

As stated above in the section of the Remarks regarding the rejection under 35 U.S.C. § 102(b), Takada does not disclose or suggest all of the elements of independent claims 1, 6, and 12 of the present invention. More particularly, Takada does not disclose a 20 ms or less time lag between ejecting the blank ink and ejecting the color. Fukushima neither discloses nor suggests anything to resolve this deficiency. Accordingly, the combination of Takada and Fukushima does not render obvious dependent claims 5, 11, and 17, as this combination does not render obvious the independent claims from which these claims depend.

CONCLUSIONS

It is respectfully submitted that all claims are now in condition for allowance, early notice of which would be appreciated. Should the Examiner disagree, Applicants respectfully request a telephonic or in-person interview with the undersigned attorney to discuss any remaining issues and to expedite the eventual allowance of the claims.

No fees are believed to be required for this submission. Should any fees be required, however, please charge those fees to Morgan, Lewis & Bockius LLP deposit account no. 50-0310.

Respectfully submitted,

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